

5. A fluorescent lamp comprising:
- a glass tube both ends of which are sealed airtight and a discharge medium filled in the inside;
  - a fluorescent layer formed on the inner wall of the glass tube;
  - a first feeding lead wire penetrating one of the sealing portions of the glass tube airtight;
  - an inner electrode connected to an end of the feeding lead wire extended into the glass tube;
  - a second feeding lead wire composed of a linear conductor which is spirally wound around an outer surface of the glass tube along an axial direction of the glass tube and an end of which is electrically connected to the second feeding lead wire;
  - wherein the outer electrode is so designed that a winding pitch of the linear conductor becomes continuously or stepwisely smaller corresponding to a distance from the inner electrode in the axial direction of the glass tube.
6. A fluorescent lamp according to claim 5, wherein the discharge medium is composed of a xenon gas or a mixture of a xenon gas with another rare gas.
9. A fluorescent lamp according to claim 7, wherein a specific resistance of the linear conductor forming the outer electrode is  $2 \times 10^{-4} \Omega\text{cm}$  or less.
10. A fluorescent lamp comprising:
- a slender and translucent tube with sealing portions formed at its both ends;

a phosphor film formed on an inner surface of the translucent tube;  
 a discharge medium containing rare gas filled in the translucent tube;  
 a first feeding lead wire penetrating one of the sealing portions of the translucent tube and sealed therein airtight;  
 an inner electrode provided at an end of the first feeding lead wire, and  
 an outer electrode composed of a linear conductor which is spirally wound around the translucent tube for almost the entire length of the tube in its axial direction and an end of which is connected to the second feeding lead wire;  
 wherein the outer electrode is provided with a tube power increasing means at a portion where a disturbed diffused positive column or a constricted positive column is generated in the translucent tube when the fluorescent lamp is operated.

12. A discharge lamp according to claim 11, wherein the winding pitch of the linear conductor of the outer electrode at the portion facing the diffused positive column becomes smaller as it departs from the inner electrode.

15. A fluorescent lamp according to claim 14, wherein a specific resistance of the linear conductor forming the outer electrode is  $2 \times 10^{-4} \Omega\text{cm}$  or less.

16. A discharge lamp comprising:

- a long and slender translucent airtight container;
- a phosphor film formed on an inner surface of the translucent container;
- an inner electrode provided in the translucent airtight container;

a discharging medium primarily composed of a rare gas filled in the translucent airtight container; and

an outer electrode composed of a conductive coil which is substantially in contact with an outer surface of the translucent airtight container extending along its longitudinal direction apart from the inner electrode and which enables it to generate discharge in the translucent container between the outer electrode and the inner electrode;

wherein the outer electrode contains at least one point of inflection where the winding pitch of the coil changes from a small value to a large value.

17. A discharge lamp comprising:

a long and slender translucent airtight container;

a phosphor film formed on the inner surface of the translucent container;

a pair of inner electrodes sealed in the translucent container at both ends;

a discharge medium primarily composed of rare gas filled in the translucent airtight container; and

an outer electrode formed with a linear conductor coil which is wound around the outer surface of the translucent airtight container along a longitudinal direction of the translucent airtight container at a prescribed pitch and which generates the discharge between the outer electrode and the pair of inner electrodes;

wherein the winding pitch of the outer electrode becomes minimum in a region (pH) facing a pair of constricted positive columns (PCs) generated in the translucent airtight container when the fluorescent lamp is in operation, becomes maximum at both ends in a region (pV) facing a diffused positive column (PCd).

18. The discharge lamp according to claim 19, wherein the outer electrode is so designed as to satisfy the formula:

$$w \times n \leq 0.3$$

where w (cm) is the width of the linear conductor forming the outer electrode and n(times/cm) is the average number of turns of windings per unit length in the axial direction of the translucent tube.

20. A discharge lamp comprising:

a translucent tube having sealing portions formed at its both ends;

a discharge medium including rare gas filled in the translucent tube;

a first feeding lead wire sealed penetrating airtight one of the sealing portions of the translucent tube;

an inner electrode provided at an end of the first feeding lead wire; and

an outer electrode composed of a linear conductor which is spirally wound around the translucent tube for almost its entire length in an axial direction of the tube and an end of which is connected to a second feeding lead wire;

wherein the outer electrode is provided with a tube power increasing means at a portion facing a disturbed diffused positive column or a constricted positive column generated in the translucent tube when the discharge lamp is in operation.

21. A liquid crystal display backlighting device comprising:

a main body;  
a lamp according to any one of the proceeding claims provided to the main body;  
and  
a lighting circuit to turn on the lamp.

Please add new claim 22 as follows:

22. The discharge lamp according to claim 20, wherein the outer electrode is so designed as to satisfy the formula:

$$w \times n \leq 0.3$$

where w (cm) is the width of the linear conductor forming the outer electrode and n(times/cm) is the average number of turns of windings per unit length in the axial direction of the translucent tube.

### **REMARKS**

These remarks are responsive to the Office Action mailed January 16, 2003. Claims 1 and 5-22 are pending in the present application. Claims 1, 5, 6, 9, 10, 12, 15, 16, 17, 18, 20 and 21 have been editorially amended for issuance. Claim 1 now depends from allowable claim 5. Claim 18 now depends from allowable claim 19. Dependent claims 2-4 have been canceled without prejudice or disclaimer. Claim 22 has been added to depend from allowable claim 20. No new matter has been added. Reconsideration and allowance of the application is respectfully requested.

### **Claims Allowed**

Preliminary, Applicants appreciate the indication of allowable subject matter the present application. Specifically, claims 10-15, 17, and 20 have been allowed as indicated in the Office Action.